

U.S. Patent Application Serial No. 10/069,976  
Amendment dated January 21, 2004  
Reply to OA of **October 24, 2003**

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1. (currently amended): A metal member to be cast-wrapped by a metal cast article, wherein said metal member to be cast-wrapped has an extruded irregular upset surface[[, a]] defining projection projections [[is]] projected from said surface, [[and]] wherein a maximum width of said projection projections at a tip end portion is wider than a maximum width of the projection projections at a base portion thereof.

Claim 2. (currently amended): A metal member to be cast-wrapped as claimed in claim 1, wherein at least a part of said tip end portion of each of said projection projections is formed in a tapering sharp shape.

Claim 3. (currently amended): A metal member to be cast-wrapped as claimed in claim 1 or 2, wherein said metal member to be cast-wrapped is an extruded member having [[a]] smooth grooves surface portions directed in a direction of extruding and irregular projections disposed between said grooves, surface portions, said irregular projections projection-defining upsets being formed when said metal member is extruded.

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Claim 4. (currently amended): A metal member to be cast-wrapped as claimed in claim 3, wherein a side of each of said irregular ~~projection~~ projections near an extrusion starting end is wide and high, and a side of each of said irregular ~~projection~~ projections near an extrusion completing end is narrow and low.

Claim 5. (original): A metal member to be cast-wrapped as claimed in claim 1 or 2, wherein said metal member to be cast-wrapped is a hollow cylindrical body.

Claim 6. (Withdrawn): A cylindrical metal member to be cast-wrapped, wherein said cylindrical metal member has an outer surface formed with projections, said projections are arranged axially in rows and arranged circumferentially at regular intervals through grooves, and tip end portions of said projections are bent laterally.

Claim 7. (Withdrawn): A cylindrical metal member to be cast-wrapped, wherein said cylindrical metal member has an outer surface formed with projections, said projections are arranged axially in rows and arranged circumferentially at regular intervals through grooves, and tip end portions of said projections are bent in axial direction.

Claim 8. (Withdrawn): A cylindrical metal member to be cast-wrapped as claimed in claim 6 or 7, wherein said projections are arranged axially at irregular intervals and are not aligned circumferentially.

Claim 9. (Withdrawn): A method for manufacturing a cylindrical metal member to be cast-wrapped by a metal cast article having an outer surface with projections; comprising:

Preparing a die having an inner peripheral surface formed with longitudinal grooves of depth  $H$  and width  $W$ , relation between a maximum depth  $H_{MAX}$  and a minimum width  $W_{MIN}$  of the groove being set as  $H_{MAX} / W_{MIN} \geq 1.5$ ;

inserting a cylindrical metal material in said die; and

hot-extruding said cylindrical metal material to obtain the cylindrical metal member to be cast-rapped having an outer surface with projections.

Claim 10. (Withdrawin): A method for manufacturing a cylindrical metal member to be cast-wrapped as claimed in claim 9, wherein said minimum width  $W_{MIN}$  of said groove is set as  $W_{MIN} \leq 1.3 \text{ mm}$ .

Claim 11. (Withdrawn): A method for manufacturing a cylindrical metal member to be cast-wrapped as claimed in claim 9 or 10, wherein relation between a minimum inner diameter  $d$  and a total inner peripheral length  $L$  of a cross-section of said die is set as  $L / d \pi \geq 1.5$ .

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Claim 12. (Withdrawn): A cylindrical metal member to be cast-wrapped as claimed in claim 6 or 7, wherein said metal member to be cast-wrapped is a hollow cylindrical body.

Claim 13. (Withdrawn): A method for manufacturing a cylindrical metal member to be cast-wrapped as claim in claim 9 or 10, wherein said metal member to be cast-wrapped is a hollow cylindrical body.

Claim 14. (currently amended): A metal member to be cast-wrapped by a metal cast article as claim in claim 1, wherein said metal member is a cylindrical member that has an outer surface containing extruded upsets forming ~~[[said]]~~ irregular surface, and surfaces defining ~~projections, said~~ projections being provided in mutually adjoining disposition ~~with said projection and~~, all of said projections being arranged axially of the cylindrical member in rows and at intervals spaced circumferentially ~~[[of]]~~ about the cylindrical member.

Claim 15. (currently amended): A metal member to be cast-wrapped by a metal cast article as claimed in claim 14, wherein each of said ~~projections~~ projection-defining upsets has a tip end portion bent laterally.

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Claim 16. (currently amended): A metal member to be cast-wrapped by a metal cast article as claimed in claim 14, wherein grooves are provided between circumferentially adjoining ~~projections~~ rows of projection-defining upsets.

Claim 17. (currently amended): A metal member to be cast-wrapped by a metal cast article as claimed in claim 14, wherein said ~~projections~~ projection defining upsets are arranged at regular intervals in said rows.

Claim 18. (currently amended): A metal member to be cast-wrapped by a metal cast article as claimed in claim 14, wherein said ~~projections~~ projection-defining upsets are arranged at irregular intervals in said rows and ~~[[are]]~~ out of circumferential alignment.

Claim 19. (previously presented): A metal member to be cast-wrapped by a metal cast article as claimed in claim 14, wherein said cylindrical member is hollow.